1-1-1982

Research List

Utah State University

COLLEGE OF AGRICULTURE

Frederic H. Wagner	Systems analysis of the presaharan ecosystem of Southern Tunisia.
William F. Campbell	Spring Creek Coal: The sodic hazard in deep recovered overburden materials--diagnostic assessment, reclamation, and revegetation.
Stephen Kleinschuster	Evaluating immunotherapeutic agents and contributing to the development of rational human clinical protocols in the treatment of cancer.
Thomas Bunch	Identification of agent and subsequent control of chronic frontal sinucitis and oscomyelitis in the North American Desert Bighorn.
Joseph Street	Food fiber characterization and analysis of diets and influences of fiber on the metabolism of toxicants, chemical carcinogensis and cholesterolemic processes.
Joseph Street	Pesticide residue data are needed for the purpose of obtaining regional and state registrations for minor crops and minor uses of many pesticides. USU will provide satellite laboratory service to participating research projects in several western states.
Joseph Street	To test components of pesticides and animal drugs that have some potential as growth promoting feed additives.
Clive Arave	Evaluation of milking machine adjustment on cow comfort during operant conditioning methods.
Jay O. Anderson	Value of tryptophan analogs in poultry diets. The hydroxy and keto analogs will be compared with pure trytophan as a means of overcoming the deficiency of protien feeds.
Jay O. Anderson	Improved diets or diet supplements will be developed to improve efficiency in raising boiler chickens.
Melvin Anderson	This project will determine the minimum roughage requirements to maintain normal butterfat production.
Warren Foote	The major purpose is to develop sheep and goats and management programs that will more efficiently provide food and fiber for man.
Warren Foote	Improving female reproductive performance of small ruminants in LDC countries.
Warren Foote	To determine if scrapie is transmitted by the parents through either the embryo directly or through the uterus to the embryo.
Warren Foote	To determine the quantity of feed required for ewes during late pregnancy and early lactation that are producing multiple offspring.
Robert Sidwell	Those specific nutritional factors will be defined which have a direct effect on the severity of viral diarrhea.
Stanley Allen	This project will verify the relationship between locoweed poisoning and congestive right heart failure in cattle.
James Shupe	To conduct clinical examination and field studies of animals for flouride effects.
James Shupe	This proposed research will help determine the effects of pollution from coal burning operations on domestic animals.
Loren Harris	To assist selected less developed countries in improving nutrition of livestock to increase the production of meat, milk, fiber, and eggs.

Loren Harris	Research to develop, compile and document feed data for the U.S.
Robert Warnick	Evaluation of feed additives in various turkey feeds.
Robert Warnick	Engineering design of a solar heated turkey brooder house.
Larry Slade	Studies will be conducted on the relationship of conformation to performance of horses and nutrition of performance.
Donald Dobson	Research concerning the relative product cost of turkeys grown in confinement and on the range.
Donald Dobson	This proposed research would resolve some of the uncertainties concerning the utilization of animal wastes and evaluate some methods of reducing health hazards.
Charlotte Brennand	To provide sensory evaluation research cabapilities to food companies in the Intermountain area. The sensory research will involve the planning, testing and analysis of sensory data to determine differences in food products, the intensities of selected attributes and/or consumer acceptance of the products.
Von Mendenhall	Improve processing techniques for turkey and turkey products.
Gary Richardson	Help evaluate a production and distribution of concentrated refrigerated lactic cultures to the Intermountain cheese industry.
Anthon Ernstrom	Improving the processing and properties of dairy products.
Rodney Brown	Project will study the coagulation of milk to develop improved methods in cheese making.
Rodney Brown	Development of tests for detection of additional antibiotics in milk based on the recently developed affinity test for penicillin.
Rodney Brown	This project will help the dairy industry better understand those things which affect their profitability--study of factors having an economic impact on the dairy industry.
Keith Allred	Evaluation of the potential of sugarbeet and fodder beet as a fuel crop.
William Varga	Adaptation of commercial and native plants for ornamental planting.
Roger Wyse	Respiration rates will be used to develop an index of storability of potatoes.
A.R. Southard	Soil inventories as a base for resource planning and development in Utah.
James Hoffman	Control of bunt diseases by chemical seed treatment.
Joseph Street	Pesticide impact assessment program. This program will provide data about pesticide usage in Utah.
John Evans	A determination of the distribution of goatsrue and a demonstration of strategies for its elimination.
John Evans	Project will study Dyer's Woad pehnology and methods of control including biological and herbicide control.
David Mumford	Seriological assay studies curley top virus enzyme--linked immunosorbant assay (EIA).
S.D. Seeley	A physiological study of rest and hardiness in fruit.
Frank Salisbury	An edamination of the clinostat problem using leady plants.
Frank Salisbury	Studies on maximum yield of wheat and other small grains in controlled enviroments.

David Walker	The effect of pruning, irrigation, rootstocks and spacing of fruit trees on yield and fruit quality.
Gerald Griffin	Chemical control of plant-parasitic nematodes on economically grown cultivars in the Intermountain area.
Wade Dewey	Improvement of winter wheat through breeding project.
Wade Dewey	Project will determine the optimum plant and environmental factors for vernalization and induction of flowering of the agropyron hybrids.
Wade Dewey	Control of dwarf bunt (TCK) of wheat through breeding resistant varieties.
R.S. Albrechtsen	Breeding and testing improved varieties of barley, spring wheat and oats.
Leonard Hall	This project will provide solar irradiance data for central Utah, S.W. Wyoming, and S.E. Idaho in supplement to data obtained for the balance of Utah under another project.
Leonard F. Hall	Trafficability program review--benefit will be greater capability to pursue research leading to improved predictions of soil bearing strength for vehicles.
Kenneth Hubbard	A Utah drought climatology and assessment of potential to alter related weather effects.
Inge Dirmhirn	Determine the inventory of solar radiation, temperature and wind in a cross section along the 40th degree of latitude through the Rocky Mountains.
Inge Dirmhirn	Two stations for collection of solar irradiance data will be operated in Southern Utah for the period of one year. The data will be used to provide the assessment of the entire state of Utah.
E. Arlo Richardson	Study to determine the feasibility of developing predictive mathematical models of range plant development and production on BLM winter ranges.
E. Arlo Richardson	Build a climatological data base for remote areas of the state where data are not currently available, to develop mathematical models relating climate and/or weather information from these sites to predict phenology, height and dry weight biomass of selected key range species.
Ronald J. Hanks	Potential for using waste water from electrical power plants for irrigation.
Ronald J. Hanks	Simulation models will be developed by using analytical and numerical methods. The field experiments involve measurements of pressure water content, salinity, rate of water application by sprinkler and dripper at various points and time.
David James	NPK levels in the Sevier River as influenced by agriculture and urban agriculture and urban activities.
Paul Riley	Predicting crop production as a function of drought and salinity stress under irrigation.
R.J. Wagnet	Soil salinity effects on the spatial variability of hydraulic conductivity.
John Evans	New weed control herbicides provided by the Hercules Corporation will be tested for effectiveness in control of weeds in sugar-beets.
S.A. Young	Crop improvement through seed certification.
S.D. Seeley	A physiological study of rest and hardiness in fruit trees.
F.B. Salisbury	Plant responses to mechanical stimuli.
F.B. Salisbury	Maximum yield of wheat in controlled environments.
A.R. Hamson	Adaptation of vegetable cultivars to Utah gardens.

D.R. Walker	The effect of pruning, rootstocks and spacing fruit trees on yield and fruit quality.
D.R. Walker	Economic survey of fruit producers.
S.D. Seeley	Allelopathic inhibitions of fruit tree growth.
W.F. Campbell	The role of ABA in starch metabolism.
S.A. Young	Effect of seed treatment on alfalfa stand establishment.
W.G. Dewey	Winter wheat improvement
R.S. Albrechtsen	Breeding varieties of barley, spring wheat and oats.
J.O. Evans	Cultural and chemical controls of weeds.

COLLEGE OF BUSINESS

William Stull	Research study to determine relationships between directors' leadership styles, organizational characteristics, and cooperative education program success.
Robert Stocker	Career development in business and office education for junior high schools.
David Luthy	Analysis of municipality insurance/self-insurance.
Clifford R. Skousen	A comparative analysis of voluntary municipal disclosure.
Clifford R. Skousen	Accounting for leases by municipalities.
William Stull	Research study to determine the benefits to faculty of involvement in cooperative education in institutions of higher education in the United States.

COLLEGE OF EDUCATION

Malcom Allred	Teacher Corps is a national program designed to train professionals (LEA, SEA, and HE levels) and lay people to meet educational needs of students from low financial and/or minority backgrounds. Among the activities of Project '78 was the development and validation of materials for the Utah Teaching Skills Project in cooperation with the Utah State Office of Education.
Donald Daugs	Programs to increase girls' interest in science at the elementary level.
David Stone & Art Jackson	This project developed materials for the Utah Skills Project and validated the effectiveness of the skills model.
F. Ascione	A descriptive analysis of sharing cooperation and helping in kindergarten children.
M. Bertoch	Bereavement in the Elderly.
Frederick Berg	To determine the most appropriate equipment to meet the individual needs of the hard of hearing students. With better equipment and listening, it is anticipated that the hard of hearing students would learn more.
Daniel Morgan	Teaching social skills to handicapped children.
Walt Saunders	This project will try to understand the development of proportional reasoning ability in adolescents.
Donald Kline	A project for the investigation and correction of child abuse and neglect in selected residential institutions in Utah.
Donald Kline	This project will assess the incidence, severity and needs of developmentally disabled persons and will target resources to serve those individuals who are substantially handicapped and most in need of services.

W.R. Borg	Improving classroom management and pupil self-concept in mainstreaming elementary classrooms.
W.R. Borg	The impact of rapid energy development on education in small communities in the Rockies will be studied to help the communities deal with resulting problems more effectively.
Barbara Ann Howell	Developing T.V. tapes for gifted and talented.
Dale Harding	A gifted-talented program for elementary children with impact on pre-service teacher education and materials for dissemination.
Marvin Fifield	Improving the utilization and educational relevance of individual psycho-educational assessment reports in the placement of and IEP development for handicapped Native American children.
Vonda Douglass	A case management approach to service delivery to facilitate independent living and social normalization for adult developmentally disabled persons.
Glendon Casto	Demonstration of innovations in the delivery services to developmentally disabled persons in the rural area and retention of professionals in those areas.
Glendon Casto	This project will identify and train 12 family day care providers to provide respite care services for handicapped pre-school children.
Glendon Casto	This project will provide nutrition training and support services to family home day care providers.
Ron Thorkildsen	This project will develop and evaluate a computer assisted instruction system for moderately mentally retarded students utilizing the videodisc interfaced to a microcomputer.
Ron Thorkildsen	Development and field testing of a microcomputer/videodisc based social skills curriculum for severely emotionally disturbed children.
Ron Thorkildsen	The SEA/USECT project for the development and dissemination of microcomputers administrative and information systems for special education.
Joseph Stowitschek	This project will provide a day care center for mentally retarded adults.
Joseph Stowitschek	This project will develop a model for integrating handicapped children into day care programs by developing social, cognitive, emotional and physical skills in the children served.
Joseph Stowitschek	Empirical identification of critical social behaviors and concomitant protocols affecting the social competence of handicapped youth.
Alan Hofmeister	Development of a microcomputer/videodisc aided math instructional management system for mildly handicapped children.
Karl White	Integrating the research literature on hyperactivity, a meta-analysis of previous research.
Karl White	Develop a mediated package for teaching test-taking skills for the elementary school child to help ensure that test results reflect skills.
Dale Harding	Project to develop and maintain a special program for a self-contained classroom for emotionally handicapped students.
Glen Latham	The regional resource center project will help strengthen the educational services to handicapped children living in Utah, Colorado, Wyoming, Montana, North Dakota, and South Dakota as well as Native American children served by BIA schools. The thrust of the project is to assure a full and appropriate education to all handicapped children in the region.

COLLEGE OF ENGINEERING

Jack Keller	To gather and analyze information for irrigated agricultural technology transfer and management.
Robert Hill	Crop yield models adapted to irrigation scheduling programs.
Wynn Walker	Previous study has shown that pulsing water inflows to furrow irrigation systems achieve higher irrigation efficiencies than conventional methods. This project is intended to develop, design operational criteria for implementation of this new concept.
Geoffrey Hill	Research on increased precipitation by cloud seeding: exploratory and development phases.
Geoffrey Hill	Systematic research and evaluation relative to an operational weather modification program for augmenting winter precipitation in the mountains of Utah.
William Grenney	Develop methodologies to evaluate the effects of water quality on fish habitat.
Jay Messer	Examine potential interactions in aquatic ecosystems between toxic metals and complex organic materials associated with oil shale extraction and processing, including possible enhancement of metal transport of carconogenicity of exotic organics.
Duane Chadwick	This project will gather data on wind energy and related parameters. The data will also be used to assist in avalanch forecasts for public safety.
Trevor Hughes	Drought management concepts, lessons of the 1976-77 U.S. drought.
Dean Adams	The response of fresh water ecosystems to allochthonous organic material.
Dean Adams	Use of solar energy for the detoxification of organic pesticides in water.
Dean Adams	The project will determine the potential health hazards and degrading impacts of oil shale and mine accrual water on certain beneficial uses.
Dean Adams	To assess trihalomethane compounds and their precursors in Salt Lake County.
Dean Adams	Environmental fate and effect of polynuclear aromatic hydrocarbons in aquatic systems.
Dean Adams	Water requirements and pollution potential of gas production from lignite shale and other carbon sources.
Gordon Flammer	A multi-track fluid mechanics course to accommodate individual differences in learners.
David Bowles	To study in-channel shale sediment relationships in the Colorado River Basin.
Reynold Watkins	Through a series of three tests it is hoped to discover the relationship between gasket compression and vertical soil pressure for buried large diameter ductile iron pipes.
Calvin Clyde	Develop low cost instrumentation which will enable well owners, consultants, and others to monitor the efficiency of water wells. This will indicate when maintenance is needed or when equipment or the installation need repair, redesign, or replacement.

Jay Bagley	Operating interactions between multi-purpose water districts and other governmental institutions in the formation and implementation of land and water policy and programs in urbanizing areas.
Jay Bagley	Adapting Western water law to accommodate equitable consideration of instream flow users.
Doran Baker	An analysis of impediments to local government reorganization consolidation caused by water institutions.
Roland Jeppson	Research on the hydrology and water quality of watersheds subjected to surface mining.
Roland Jeppson	Development of hydraulic methods for solution of flood flows on alluvial fans.
Roland Jeppson	Simulation of hydrology of reclaimed strip mine land.
Earl Israelson	To delineate and study salt loading mechanisms for the Price-San Rafael River Basins and to identify structural and non-structural plans for reducing the salt contribution to the river systems.
R.E. Griffin	Dye study in Parowan Valley.
Paul Tullis	Evaluating scaling criteria for vortex modeling.
Rangesan Narayanan	Efficient allocation of water between agriculture and energy through optimum techniques of water use and conservation.
Rangesan Narayanan	The effects of drought on the allocation of water between agriculture and energy considering instream uses.
Paul Riley	The potential of water and salt yield from overland flow on national resource lands in the Price River Basin in Utah.
Frederick Post	Study the effects of organic ligand and complexation on heavy metal bioaccumulation in crops, soils, and stream benthic communities subject to runoff contaminated by spent oil shale leachate.
Douglas James	Index construction for conjunctive water and land management: a process tested on a high mountain watershed.
Loren Anderson	This project will develop a probabilistic approach for determining the factor of safety of tailings embankment dams.
Loren Anderson	Development of a liquefaction potential map for Salt Lake County, Utah.
Vincent Lamarra	The project will evaluate and improve the water quality of Bear Lake.
Jean-Pierre StMaurice	Studies of high latitude ion dynamics.
Joe Doupnik	Digital ionosonde studies of the ionosphere from Siple Station, Antarticia and Roberval, Quebec.
David Burt	This is a continuation of the upper atmosphere studies that the Space Measurements and Electro-Dynamics Laboratories have been involved in for determining the characteristics of the infared radiation in the earth limb.
Doran Baker	This program is for the engineering of techniques and systems for the measurement of infared energy which is critical to the nations resources, environment and self defense.
A.J. Steed	To develop instrumentation and provide equipment operation support for Air Force geophysics laboratory infared measurements programs.
A.J. Steed	Development of optical radiation sensor systems.

William Jones	This project is a feasibility study in connection with testing of photodetectors.
Ronney Harris	Help design the MX missle to be invulnerable to lightening and external electromagnetic radiation.
Ronney Harris	This project will provide us techniques to find stratospheric temperatures globally.
Kay Baker	Determination of the causes of disruptions of radio and defense transmissions due to upper atmospheric disturbances.
Kay Baker	Cooperative measurements of electric fields produced by a radial shaped-charge detonation in space.
Kay Baker	Experimental studies of turbulent electrostatic waves in equatorial electrojet and in two active space plasma events.
John Raitt	An investigation of current collection process in the ionospheric plasma at high potential.
Warren Phillips	Computer modeling of containment covers to reduce radon gas emission from mill tailings.
Alma Moser	Structural performance of buried filled and foamed PVC pipe and material properties of special formulations of filled-foamed PVC.
Reynold Watkins	Long term deflection of buried pipes.
Thomas Blotter	Improved deburring will increase productivity by reducing manufacturing time and expense.
Geoffrey Hill	Assessment of precipitation augmentation potential in winter orographic cloud systems: calibrations and feasibility study.
Rangesan Narayanan	The effects of drought on the allocation of water between agriculture and energy considering instream uses.
Clair Batty	Develop innovative methods of conveying thermal concepts in thermodynamics and heat transfer.
Clair Batty	Conduct research on salt gradient solar ponds and thermal to electrical conversion technologies.
Thomas Blotter	Dynamic structural models of hardware for shuttle.
Thomas Blotter	The measurement of stress and strain in plant stems experiencing geotropism.

COLLEGE OF FAMILY LIFE

Arthur Mahoney	Foods will be analyzed to obtain missing information of products that have been recently developed and of nutrients of common foods for which insufficient data now exist.
Bonita Wyse	A new technique developed by USU nutrition researchers will be used to determine pantothenic acid content in foods and status in humans.
Bonita Wyse	Food guidance data base--this data base will permit the assessment of the nutritional adequacy of the diets consumed by the public for these nutrients.
Deloy Hendricks	Infant pigs will be utilized to study the utilization of osteogenic nutrients from plant protein level infant formulas. Blood samples will be drawn to determine levels of serum alkaline phosphatase, phosphorus and calcium. Animals will be autopsied.
Tom C. Peterson	Use and acceptance of telecommunication offering systems.
Tom C. Peterson	Clothing purchase practices in Cache Valley.

Molly Longstreth	Description of the thermal efficiency of U.S. residence.
LaRae Chatelain	Consequences of energy conservation policies for western region households.
R. Gaurth Hansen	Developing guidelines for evaluating nutritional quailty of foods.
Ann Marie Weiner	Professional development in consumer and home economics preparation for the dual role of homemaker and wage earner in home economics related occupations.
Leona Windley	Save energy with interior window treatments. To develop educational materials, inservice training and implementation.
Jane McCullough	Revising and updating the homemaker sections of the homemaker-home health and training program.

COLLEGE OF HUMANITIES, ARTS, AND SOCIAL SCIENCES

Ronald Little	This project will examine the social process and consequences of transferring water from traditional agricultural uses to the production of electric energy in rural communities.
Brian Pitcher William Stinner Michael Toney	The aim of this research is to increase our understanding of the effects of specific life changes (loss of health or socioeconomic status, retirement, death of spouse) on elderly men's perception of powerlessness and how these effects differ for various groups and as a function of different background variables.
Brian Pitcher	This project involves primary research to identify factors associated with individual religious participation.
William Stinner	Analyses of migration patterns, behavior and consequences and population redistribution in Utah, United States, and abroad.
Michael Toney	Analyses of migration behavior of graduating Utah high school students.
Michael Toney William Stinner	Race, migration and social mobility among younger adult American men.
Ann Leffler Richard Krannich	Effects of rural change in Utah on family life. Kinds of change examined include community decline, and growth related to recreation or retirement as well as to energy. For comparison purposes, a stable community will be investigated too. Family life foci include family stress, intra- and inter-family networks, and role relations among family members.
Richard Krannich	This project involves an attempt to identify how local residents respond to rapid change in energy development communities and whether strong social ties might insulate them from possible stress and personal disruptions.
Wesley Maughan	Community needs assessment studies to determine priorities for action programs. Twenty of these studies have been accomplished over the past two years.
Yun Kim	Analysis of population trends, estimates, and projections in the state of Utah.
Moshe Hartman	To study the characteristics if female labor force participation in Utah and the changes in the patterns of participation between 1900 and 1950. Relies on censuses 1950-1980 and involves comparison to national patterns.
Glenn Wilde	Feasibility study to investigate the rural public library as information and learning center in impacted western rural communities.
Scott Gutting	The project objective of the Southern Utah Energy Assessment Analysis will be to demonstrate, through the application of various solar and conservation techniques within community, the feasibility and cost-effectiveness of utilizing renewable energy sources.

Scott Gutting	The principle investigator will assist Utah communities under the Utah Community Energy Grant Program in planning and implementing cost effective energy conservation and renewable energy planning programs.
Craig Johnson	Urban Forestry Manual for Utah and adjacent areas within the Great Basin.
Randy Simmons	To investigate why people free ride, of choices are more or less selfish in individual choice dilemmas than in collective choice dilemmas, and the effects of exit on the production of public goods.

COLLEGE OF NATURAL RESOURCES

Richard Schreyer	An examination of factors affecting change in recreation participation and their relevance to resource management.
Charles Romesburg	Development of a course in the principles of mathematical applications, with emphasis on cluster analysis.
Richard Hawkins	This project will lead to an understanding of the hydrologic limits of mining development and waste disposal, and thus enhance public safety and economic welfare.
Kent Downing	Develop and apply methods for evaluating factors which influence dispersed recreation use patterns for case study areas in Utah.
Kim Marshall	This project will benefit the public by estimating how much timber we can safely cut from our old growth public forests.
C.R. Michael Parent	The economic effects of outdoor recreation in Utah.
John Malechek	Rangeland research for increasing small ruminant production in Latin American highlands.
John Malechek	Rangeland research for increasing small ruminant production.
Gerald Gifford	This project will provide land managers with some guidelines as to the importance for managing successional patterns within the Aspen-Conifer Ecosystem to ehnance water yields for long-term salt dilution within the Colorado River system.
Gerald Gifford	Nonpoint transport model for indicator bacteria from Western rangeland watersheds.
Gerald Gifford	Rainfall simulator and related studies for evaluating infiltration and erosion on native rangeland soils and adjacent recently developed farmland near Bear Lake.
Kendall Johnson	To accelerate application of research results on salt-desert shrub ranges to similar rangelands in the arid west by assembling, summarizing, and publishing existing knowledge and technology.
Richard Fisher	Impact of acid deposition on sensitive mountain soils.
Richard Fisher	Factors leading to the occurrance of prairie soils under forests in the Intermountain West.
James Long	Evaluation of containerized seedlings for reformation in Utah's spruce-fir type.
James Long	Stand desnity index and density control in coniferous systems.
Martyn Caldwell	Tolerance of herbivory by native and exotic bunchgrass in the sagebrush/bunchgrass ecosystem.
Martyn Caldwell	To alert the public to possible hazards of a deteriorated ozone layer and associated increase in the amount of solar ultraviolet radiation striking the earth's surface.
Bryant Gomm	New plant materials are evaluated for potential use and production on rangelands.
Philip Urness	Forage quality analysis of burned and unburned aspen types in Western Wyoming with emphasis on digestibility, crude protein, and phosphorus levels for elk, deer, cattle, and sheep.

Neil West	Non-tillage seeding to reverse desertification of grass-depleted rangelands.
Michael Wolfe	An initial study of wild horse and burro demography: Determination of pregnancy and lactation rates in various herds.
Frederick Knowlton	Coyote predation upon domestic sheep is a serious economic problem. Studies of coyote biology and behavior coupled with predator-prey interactions with aid in anticipating, managing and resolving conflicts in predator management.
Frederick Lindzey	Movement and activity patterns of members of a cougar population will be studied to provide a biological basis for decisions to be made concerning future land uses and hunting and damage control problems.
Frederick Lindzey	Timber harvesting has many impacts on black bear populations and these relationships need to be more fully understood. This work will attempt to provide some of this information.
Charles Berry	Physiological and genetic studies of trout strains in commercial and agency hatcheries.
Michael Wolfe	To determine a comprehensive census technique for muskrat populations, utilizing marking and capturing methods and vegetation utilization indicies.
Frederick Lindzey	To investigate whether low productivity in deer herds in the Southwestern part of Utah may be explained by low ovulation rates or fawn mortality.
Frederick Lindzey	Habitat selection will be determined for ruffed grouse as it relates to aspen and associated communities.
Frederick Lindzey	Relationship between black bears and clearcut areas in the Pacific Northwest.
Charles Berry	Behavior and ecology of the carp in Bear River Migratory Bird Refuge.
Barrie Gilbert	Efficacy of removing coyote litters in reducing depredations on sheep.
John Kadlec	The effects of water flow rates and water level fluctuation on managed waterfowl marshes in Utah.
William Helm	Defining stream fish microhabitat requirements for water project planning.
George Innis	Analysis and parameter interpretation of the aspen model.
Ross Bulkley	Striped bass spawning migrations and feeding in the upper Colorado River drainage.
Ross Bulkley	Tolerance and preference of Colorado River endangered fishes to selected habitat parameters.
Gar Workman	Study the movements of Bighorn Sheep in Canyonlands National Park.
Gar Workman	Species suitability curves for Rocky Mountain fishes of ecological importance.
Gar Workman	Acquatic and riparian ecology of the north fork of the Virgin River and Deep Creek will be studied in order to develop a baseline from which changes can be measured and predictions made.
Clair Wyatt	Examine 7 species of birds and elements in their natural background under laboratory conditions.
Clair Wyatt	Research to design, develop and test a remote sensing system based on reflectance spectra for mule deer.
	To aid in the recovery of the endangered Utah Prairie Dog.

Nabil Youssef	We are proposing to identify the causative agents of the chalkbrood disease of the leafcutter bees and to determine the factors that influence its spread in different populations of bees.
Nabil Youssef	Scanning electron microscopy of young corn leaves treated with three dicamna formulations.
Robert Schunk	Additional theoretical studies of plasma and neutral gas transport processes in the ionosphere.
James Bowman	Plant cell and tissue culture research.
James Macmahon	To study the roles of some animals in reforestation following a volcanic disturbance.
Ting Hsiao	Biochemistry and neurophysiology of presynaptic neurotoxins of insects.
William Brindley	To study detoxication potential in aphids.
William Brindley	We have learned to measure how toxic insecticides are to insect pests. We plan to find out if this knowledge can be used by farmers to decide upon what dose of insecticide is the best to use.
Anne Anderson	The molecular basis of resistance or susceptibility of plants to a fungal pathogen will be studied. Pathogen cell surface components will be examined for their abilities to case resistance or susceptibility in the plant.
Anne Anderson	The role of cell surface structures in determining specificity of plantpathogen.
Anne Anderson	The role of fungal elecitors in plant-pathogen specificity.
Eldon Gardner	Studies of Utah colorectal cancer families.
Legrande Ellis	Problems of male infertility and neonatal kit loss in finely-bred dark mink.
Sherman Thomson	Evaluation of the economic importance of fungicides for early blight control of tomato.
Sherman Thomson	Control of aspen leaf spot and powdery mildew of tomato with fungicides.
Austin Haws	Range improvement--a key to increased food, jobs, water, energy resources and money in the four corners area.
Gene Miller	Injury of plants with flouride, an air pollutant.
Gene Miller	Effects of mine spoils on mineral nutrition requirements and forage quality of plant species used for revegetation.
Gene Miller	Mineral nutrition studies on plants using mineral organic sprays.
Bill Barnett	Aid in development of procedures for treating and preventing rotavirus diarrhea.
Frank Parker	Research in pollution and pollinator introduction programs.
Mike Allen	Mycorrihzae and nutrition of plants.
Mary Barkworth	A systematic study of stipa in North America.
Mary Barkworth	Intermountain species of the genus brockellia will be characterized using a combination of morphological and anatomical characters.

Bill Barnett	Rotaviral gastroenteritis in infants and young children.
Neal Van Alfen	The role of pathogen produced macromolecules in vascular wilt diseases.
Neal Van Alfen	We are proposing th investigate a newly discovered means of control of plant disease by biological agents.
Neal Van Alfen	The proposed research will be an investigation into the nature of a biological control agent for chestnut blight.
Jon Takemoto	Topographical studies of bacterial photosynthetic membranes.
Donald Davis	This project will help in the general support program in the biological studies of control of mites and insects on fruit trees.
Donald Davis	Insecticide field test for control of the mountain pine cone beetle in sandpoint seed orchard.
Donald Davis	A biological and taxonomic study of wireworms affecting wheat and barley in Northern Utah.
Daniel Comins	Asymmetric synthesis of optically active alcohols utilizing aminopyridine derivatives as chiral synthons.
Jack Lancaster	Bioenergetics of the methanogenic bacteria.
Edward McCullough	Partial-wave methods in molecular electronic structure calculation.
William Moore	A study of halogenzted compounds of atmospheric importance using negative surface ionization.
Richard Olsen	This proposal is concerned with the synthesis of peptide antibiotic 593A. This antibiotic possesses activity against certain tumors and is reported to be an effective anti-leukemic agent.
Rochard Olsen	Synthetic antibiotics will be evaluated for their biological activity and for their effectiveness in binding to DNA.
Grant Gill Smith	A study of the diagenesis of geologically important organic matter. The diagenesis of amino acids under simulated natural conditions. A detailed study of the mechanism of amino acids racemization.
Jack T. Spence	The function of molybdenum in biological systems.
Thomas Emery	Mechanisms of microbial iron transport.
Thomas Emery	Synthesis and bioassay of siderochrome analogs.
Ian Macdonald Anderson	Research in applied mathematics: A further study of the inverse problem in the calculus of variations.
Chris Coray	Microcomputer usage and applications in the secondary schools.
Daniel Comins	Alkaloid synthesis via 2-akenyl-1,s-dihydro-pyridines. The development of new synthetic reactions.
Neal Langerman	It is currently suggested that the flavorproteins have a substructure which is in many ways similar to the NAD system. The experiments outlined in this proposal are designed to test the hypothesis.
Karen Morse	Metal-Borane complexes containing unusual bonding characteristics complexes of boran analogs of amino acids.
Joe Morse	Reactions of coordinated ligands. Student would investigate alkylatim and flourination of coordinated chlorophoshines on Cr(o). Research would involve synthesis and Cr and mnr spectroscopy of air sensitive materials.
James Bezdek	Optimization and validity tests for the generalized c/varieties clustering algorithms.

Jean-Pierre StMaurice	Study on ion dynamics and related effects at middle and high latitudes.
Jean-Pierre StMaurice	A continuing study of ionospheric and thermospheric dynamics and related effects.
Marsha Torr	Auroral imager of magnetospheric energy.
Marsha Torr	Application of the imaging spectrometric observatory to the enad investigation: support of definition phase activities.
Marsha Torr	Completion of development of the imaging spectrometric observatory for spacelab 1.
Marsha Torr	Calibration of measurements of atmospheric emissions.
Douglas Torr	Theoretical analysis of the atmosphere explorer data under the James C. Walker Theoretical Program.
Douglas Torr	Theoretical studies of thermospheric composition energetics and dynamics.
Douglas Torr	The imaging stratospheric ultraviolet spectrometer for UARS: Instrument definition.
Douglas Torr	A wideband interferometer spectrometer for imaging dayglow.
Douglas Torr	Innovative projects in electromagnetism.
B. Boeker	Enzyme kenetics time course by means of integrated equations, associating systems.
John Foster	Development of an auroral precipitation index.
John Foster	High time resolution studies of the auroral ionosphere.
Robert Schunk	The flow of plasma in the solar terrestrial environment.
Joe Doupnik	Digital ionosonde studies of the antarctic ionsosphere.
Gene Adams	Experimental investigation of mesospheric scattering processes.
Rex Megill	Altitude distribution of atmospheric minor species and temperature in the 10 to 60 KM range.
Jack Chatelain	A finite element application.
Wilford Hansen	Characterization of small absorptions in optical coatings.
Wilford Hansen	Optical coating and surface characterization.
Farrell Edwards	A study of magnetic merging and reconnection using a new electromagnetic formalism.
Gordon Lind	Pion deep inelastic and absorption reactions in nuclei.
F.T. Berkey	Ioinsonde studies of the cusp ionosphere from South Pole Station, Antarica.
John Raitt	The response of the high latitude ionosphere to convection electric fields.
Roger Williamson	Upgrading of prototype command receiver.
Roger Williamson	USU participation in the middle atmosphere electrodynamics explorer superpressure balloon program.
Kay Baker	Investigations of vehicle charging and potential on the orbital flight test four.
John Raitt	To perform plasma chamber tests and develop pre-sets instrumentation systems.
David G. Wright	Embedding theory and decompositions of manifolds.
Duane Loveland	Embeddings of 2-spheres in Euclidean 3-space.
Michael Windham	Applications of fuzzy sets to cluster analysis.
Russell Thompson	Boundary value problems of nonlinear ordinary and partial differential equations.

Jerry Ridenhour	Green's function and linear boundary value problems.
Bob Gunderson	A chemometric application of recent advances in cluster analysis.
Michael Brennan	Length laws for random subdivision of longest intervals (Stochastic Processes and Probability).
James Bezdek	Image processing algorithms applied to the aerospace industry (Pattern Recognition).
LeRoy Beasley	Linear transformations on matricies which leave certain functions invariant.

JOINTLY ADMINISTERED PROJECTS

Cris Lewis	Economic impact on farm and ranch enterprises of removing crop and grazing land from production by coal strip mining.
John Keith	The effect of risk of drought on energy development and water allocations: a programming model for Utah.
John Keith	Evaluation of the free flowing recreation resource on the Salt River, Arizona.
John Keith	A review of regional impacts of U.S. Forest Service grazing improvements in Millard County, Utah.
Bruce Godfrey	Definition of economic research needed to evaluate forage supplies on range and cropland for integrated assessments of renewable resources at national, regional, and state levels.
Bruce Godfrey	Use of rangeland simulation models to improve economic evaluation of range improvement practices.
Bruce Godfrey	The economics of mountain pine beetle control.
Terrence Glover	This study is undertaken to understand the balance between social/economic/resource/environmental interests of the Utah Great Basin.
Darwin Nielsen	A project to go out and collect information in the eleven western states dealing with the maintenance of public land grazing resources. Effects on local ranges and resource are also researched.
Marion Bentley	Utah State University will join with the University of Utah and Weber State College in providing additional professional consultation services to small businesses in Utah under the small business development concept.
Craig Petersen	Analysis of questionnaire data on energy conservation and solar energy.
Arthur Mahoney	Meat curing effects of heme and nonheme iron bioavailability in rats and C. botulinum.
Joann Mortensen	Improve homemaking skills of Asian refugees.
Don Dwyer	To provide input of scientific and research information to the Bureau of Land Management in developing allotment management plans and environmental impact studies on BLM lands.
Wayne Ringer	This project is designed to divert pollutants from one of the major tributaries of Deer Creek Resevoir.
Clell Bagley	Increase beef production through improved reproduction management.
Wesley Maughan	Community problem analysis and goal setting.
	To provide useful and practical information related to agriculture, home economics, and youth activities for the Navajo Indians.
Karen Riemondy	To educate the population of Cache Valley as to the benefits and methods of recycling for newspaper, aluminum, steel, glass.